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Flexible inflation targeting vs. nominal GDP targeting in the euro area

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IN-DEPTH ANALYSIS

Abstract

We assess the pros and cons of nominal GDP targeting vis-à-vis flexible inflation targeting regime. We show that the benefit of a regime shift towards nominal GDP targeting in the euro area might be small. Moreover, nominal GDP targeting is not concerned with financial stability. Finally, targeting nominal GDP would make ECB communication very difficult. If the aim of a regime shift were to bring the ECB to pay more attention to growth, it would be more straightforward to fix a dual mandate and to set an explicit target for real output growth or the unemployment rate.

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EXECUTIVE SUMMARY

Nominal GDP (NGDP) targeting has resurfaced in the recent debate on the monetary policy regime. Some economists have argued that it would help central banks to better achieve their mandate. In the US, it would help the Federal Reserve to meet its dual mandate. In the euro area, others claim that it would make economic growth enter the realm of central bankers. The NGDP targeting regime would provide better macroeconomic stabilization properties than its direct competitor, the inflation targeting regime, which has been largely adopted by central banks since the 1990s. In this paper, we aim at assessing the pros and cons of NGDP targeting compared to inflation targeting.

First, it should be reminded that inflation targeting (IT) regimes do not overlook activity. Actually, in flexible IT regimes, the central banks also react to economic activity. Then, flexible IT and NGDP regimes are very close. Our estimates and simulations provide some illustrations on this point. Therefore, the benefit of a change in regime might be very small.

Second, communication issues may arise with the adoption of NGDP as neither the nominal GDP, nor the implicit GDP deflator are variables which are scrutinized by households or firms. As communication plays an important role for the credibility of monetary policy, we consider that such a regime shift would introduce unnecessary difficulties for the ECB without providing much more flexibility.

Third, if the aim is to bring the ECB to pay stronger attention to growth, it would be more straightforward to fix a dual mandate and to set an explicit target for real output growth or the unemployment rate.

Finally, it is not clear whether NGDP targeting would promote financial stability or not. IT regimes have been widely criticised in this respect and the adoption of NGDP targeting would not make central banks be more concerned by financial stability. In our view, promoting financial stability is the main challenge for central banking, an issue on which NGDP targeting does not provide satisfactory answers.

1. INTRODUCTION

The debate on the opportunity of adopting a nominal GDP (NGDP) targeting regime raises the issue of whether the change in central banks' practices would improve the current economic environment. Therefore, this debate raises the issue of the (in)effectiveness of current monetary policymaking. For two to three decades, most central banks have adopted regimes which are considered close to an inflation targeting (IT) regime. There may be some differences though. The Bank of England is, for example, a "pure" inflation targeter, whereas ECB has not adopted this regime, although with its price stability objective, it is close to. The question arises of whether changing the policy regime towards NGDP targeting would improve macroeconomic and financial stability in the euro area in comparison with the IT regime.

In the first part of this paper, we discuss the very nature and objectives of inflation targeting, before surveying empirical research about the economic performance of IT countries and central banks.

In the second part, we test different monetary rules in the euro area and wonder whether IT and NGDP targeting regime are close one to another. If they are, a formal regime shift would not generate many advantages. We also investigate the rooms for manoeuvre that the adoption of NGDP targeting might have brought to the euro area.

Finally, we conclude on the requirement to enhance central bank communication and to improve financial stability. The NGDP targeting regime does not seem well-suited to both objectives.

2. INFLATION TARGETING AND NOMINAL GDP TARGETING: A REVIEW OF THE LITERATURE

2.1 Inflation targeting: definition and performance

A great deal of attention has been paid to IT in the literature devoted to monetary policy during the “Great Moderation”. As such, this strand has advocated a general framing of monetary policymaking, encompassing clear targets, accountable policymakers and a flexible strategy. In the words of its promoters, e.g. Bernanke et al. (1999), inflation targeting should be viewed as a “framework” rather than as a prescription of adopting mechanical rules like the Taylor rule. The essence of IT lies somewhere between rules and discretion, and has been labelled: “constrained discretion”. The IT framework can be related to discipline in that it anchors expectations thanks to the publicly announced inflation target range. But it permits some flexibility: deviations from the target do not incur a loss of credibility and reputation provided the reasons for the deviations are explained to the public. This flexibility gives some leeway to monetary policy and gives IT framework a specific feature that a mechanical use of a Taylor rule cannot retain. Flexibility is also needed to account for the transmission delays of monetary policy. As it takes time for interest rate changes to alter the path of activity and inflation, the central bank cannot tame contemporaneous shocks and then cannot perfectly control current inflation. Consequently, inflation expectations play an essential role in the implementation of IT.

This may explain why most of empirical papers dedicated to inflation targeting do not only focus on inflation performance but also deal with the anchoring of private expectations. Evidence points to lower and better anchored inflation expectations with IT adoption (Johnson, 2002, Levin et al., 2004, Fregert and Jonung, 2008, and Gürkaynak et al., 2010), while there is no significant effect on inflation performance (Cecchetti et al., 2002, Ball and Sheridan, 2003, Angeriz and Arestis, 2007, Lin and Ye, 2007, Genc, 2009, and Cecchetti and Hakkio, 2009). These papers are all confronted with the control group problem enlightened by Gertler (2003) and magnified by the exceptional stability of inflation during the last decade. Insofar as all countries in the world have seen inflation rates decrease, it is difficult in a comparative setting to evidence a change either in inflation expectations or in inflation performance that could be solely attributed to a change in institutions. Besides, some central banks are not considered as inflation targeters as they have not adopted such a regime *de jure* whereas inflation is central in the implementation of monetary policy (it is notably the case of the ECB). The control group may not perform differently from the inflation targeters’ group.

Compared to the literature on the impact of IT on inflation performance or private expectations, a few studies investigate whether the institutional adoption of IT has modified the conduct of monetary policy. A frequent criticism against IT (see the CEPR volume edited by Lucrezia Reichlin and Richard Baldwin, 2013) has been to state that IT central bankers have an exclusive target, inflation, and do not pay sufficient attention to other targets, like output gaps, nominal growth and financial stability. Empirical research on the monetary reaction of IT central banks helps investigate this statement. Seyfried and Bremmer (2003) find a break in the monetary policy reaction functions of six IT countries, and they conclude that IT central banks pay more attention to inflation pressures (proxied by the output gap) than to current inflation (whose coefficient is never significant). In opposition and for the UK specifically, Trecroci and Vassalli (2010) find, using time-varying parameters, higher response to inflation across time (but with a significantly negative interest rate smoothing parameter) and Assenmacher-Wesche (2006), using Markov-Switching VAR, low and non-significant response to inflation before

IT and a higher response afterwards. Davradakis and Taylor (2006) find significant response to UK inflation only since IT adoption but provided the latter is above target. Baxa et al. (2014) find that the response to inflation has become less strong after IT adoption in five IT countries with a TVP model. Creel and Hubert (2015)'s main result is that the adoption of inflation targeting has not led to a stronger response to inflation in Canada, Sweden and the UK. This result is consistent across three econometric models and across alternative specifications regarding the source or the nature of the potential break or the targeted real variable (the output gap or the unemployment rate). Moreover, there is no evidence of a higher response to output which may suggest increased concern about inflation if output is considered as a leading indicator of inflation.

From the most recent literature, two intertwined interpretations may be put forward, based on two supposed benefits of inflation targeting. First, IT - through central bank commitment to a target - is meant to anchor private inflation expectations, which will enable a central bank to control inflation without pursuing aggressive action towards inflation variations. Second, the central bank's decision to lower inflation may have actually led to low and stable inflation, and hence to a lower response to inflation. The credibility of the monetary policy framework change may have thus led to changes in inflation expectations and in the inflation process. Osborn and Sensier (2009) and Faroque and Minor (2009) provide strong evidence of changes in the level and persistence of inflation respectively in the UK around 1992 and in Canada around 1991 when inflation targeting was introduced. Their results are consistent with Benati (2008) for a wider range of countries. Fregert and Jonung (2008) provide evidence of a decrease of inflation expectations through wage agreements in Sweden when IT was implemented. Since long term expectations appear to be better anchored with IT (Gürkaynak et al., 2010), central banks have no reason to increase their response to inflation.

Last, the outcome of Creel and Hubert (2015) suggests that inflation targeting countries which have adopted the IT *framework* have not over-emphasize inflation deviations from target like "inflation nutters" to take the words of King (1997), while the IT *paradigm* common to IT and non-IT central banks in the last decade has made emerge a consensus around the inflation target at a 2% level. The debate on IT adoption might therefore be centered on the level of the inflation target rather than on the supposed over-emphasis of monetary policymakers on inflation at the expense of other policy targets.

The advent of the global financial crisis has certainly revived criticism against IT. Contrary to what had been long taken for granted (see Blot et al., 2015), the objective of price stability has not showed a unique relationship with financial stability. Stated differently, price stability has not produced financial stability. Frappa and Mésonnier (2010) have notably suggested that house prices increases have been higher for countries adopting IT regimes than for non-IT countries. Does this mean that IT has been responsible for the crisis? The empirical literature discussed above shows that the performance of IT countries has not been worse than non-IT countries. In this respect, IT would not be a specific "perpetrator" of the crisis (see the introduction of Reichlin and Baldwin, 2013). Moreover, the anchoring of expectations that IT or IT-like monetary policies (e.g. ECB policies) have performed has been unanimously praised (Gillitzer and Simon, 2015). Finally, Fazio et al. (2015) suggest that banks in countries which have adopted IT regime are more stable and seem to be less vulnerable to global liquidity shocks.

In practice, it has then been shown that countries which have adopted IT regimes have generally not overlooked output performance (and notably the output gap) either because such a variable can be seen as a leading indicator of future inflation or because

central bankers also care about growth and employment performance and consider that monetary policy may help to stabilize the output, at least in the short term. From here, it comes that adopting formally a NGDP targeting would not boil down to adding an indicator of activity in the central banks' objectives or in their reaction function.

2.2 Nominal GDP targeting

The long lasting real crisis stemming from the global financial turmoil of 2007-2008 has revived a debate about a change in monetary policy strategy. The former "Jackson Hole" consensus, according to which central banks should target inflation, has been challenged. Financial stability has now become a major concern and may then become an objective for central banks. Besides, deflation fears have resurfaced with the persistent slack of economic activity notably in the euro area. Under a growing risk of deflation, and considering it finally occurred, a few economists proposed to apply a nominal GDP targeting which would partly disconnect monetary policy from an exclusive inflation target. Nominal GDP targeting consists in adopting a simple feedback rule in which the central bank moves the policy rate in response to deviations of the nominal GDP to a target (defined in level or in growth rate). The target would be defined as the sum of an inflation target and the growth rate of potential output.

In the current deflation context, one important line of reasoning is that a shift from IT to NGDP targeting would permit an immediate monetary stimulus. With inflation below the 2% target and output below its potential, central banks would easily legitimate new decisions to foster unconventional measures. Moreover, if the regime shift were credible, central banks would achieve a better anchoring of expectations: expected growth and inflation would increase and the economic situation would improve. In the US, advocates of a NGDP regime consider that it would help the Federal Reserve to better fulfil its dual mandate. Frankel (2013) argues that: "a 4-5% target for nominal-GDP growth in the coming year would have an effect equivalent to that of a 4% inflation target". Considering the aversion of most central bankers to a sudden rise in their inflation target, Frankel argues for a two-step shift in the monetary targets: first, a shift to two targets, one for inflation and one for nominal GDP, in order to keep inflation expectations anchored; then a shift to a single NGDP target once real growth has come back to its potential.

Another argument for NGDP targeting relates to the nature of shocks. Whereas demand shocks can be optimally dampened by an inflation-targeting strategy, supply shocks cannot (Sumner, 2012). In the latter case, central banks face a trade-off between a decreasing inflation and an increasing output. Under a NGDP targeting, it is argued that a productivity shock would be better managed than under an IT regime. The central bank would tighten (loosen) monetary policy if the real consequences of the shock were more important than the inflation effects.

A third argument in the literature relates to public debt: the sustainability of public finances, which is of high importance in the Euro area, draws heavily on the evolution of debt to nominal GDP. Targeting the latter would help anticipate the future debt to GDP ratio and the fiscal policy required to achieve its stabilization, hence achieving better coordination of monetary and fiscal policies (Turner, 2013). The stabilization property of NGDP targeting on the household debt-to-GDP ratio is also advocated by Koenig (2013) and Sheedy (2014). When households' debt is contracted with fixed nominal interest rates, NGDP targeting would contribute to reducing the volatility of the value of the unit of account at long horizon. It would thus contribute to stabilizing the economy by reducing the unintended redistributive effect of fluctuations in the value of the unit of account. Empirical works conclude that these redistributive effects can indeed be substantial (Doepke and Schneider 2006).

Targeting a nominal variable is quite reminiscent of monetary targeting in the monetarist vein of Milton Friedman. The revival of NGDP targeting therefore raises the issue of its feasibility. Belongia and Ireland (2015) argue that the velocity of monetary aggregates is stable enough to make monetary targeting feasible.

Five counter-arguments to a formal adoption of NGDP targeting can be put forward:

1. The first is recurrent in the literature: NGDP targeting is close to flexible inflation targeting where the interest rate moves with inflation deviations and the output gap along a Taylor-type monetary policy rule (see e.g. Koenig, 2012; Frankel, 2013; Woodford, 2013). Garin et al. (2015) argue that IT, output gap targeting and NGDP targeting are only special cases of a Taylor rule encompassing inflation, output gap and NGDP variables. In this respect, it may well be that NGDP targeting has de facto been implemented and an institutional shift to NGDP targeting is not necessary.
2. The second counter-argument relates to the nature of NGDP targeting: in level or in growth-rate. There have been a few papers discussing the comparison between both (McCallum, 2015), the adoption of the former (Woodford, 2013), or a comparison with price level targeting (Billi, 2015)¹. Adopting a NGDP target in level would work as an “error-correction” mechanism as Woodford names it: overshooting the target would have to be followed by a period of undershooting. Variability in prices and GDP would not change provided private agents were perfectly able to expect the error-correction. However, if rational expectations are not shared by the central bank and the public, NGDP targeting in level will generate an increase in the variability of NGDP, hence a cost to the economy.
3. The third counter-argument relates to the transparency and ability to communicate on nominal GDP. The reason is: nominal GDP is an index which has no tangible content for the public, whereas a consumer price index draws on prices which are meaningful to the public (Posen, 2013). Moreover, NGDP is regularly revised and is final only a few years after the first data issue. Practicing NGDP targeting in growth-rate or in level will eventually mean a lot more policy errors than under an IT regime. It must also be added that with NGDP, the target might be revised more frequently with the change of potential output. Whereas there is a broad consensus on the inflation target, there is much more debates on the growth rate of potential output, which may change with labor force participation and trend productivity. Central banks would then have to change the target from time to time, making communication tricky with the risk of undermining central bank’s credibility. Finally, NGDP is based upon the price of GDP, not the price of consumer goods, and the price of GDP is certainly more out of reach of the public understanding and concern than the price of goods and services.
4. In the NGDP regime, the composition of nominal growth (inflation versus real growth) would not matter. Yet, social preferences may give different weight to these two variables, justifying some asymmetry in the reaction function.
5. The fifth counter-argument relates to financial stability. With its focus on nominal GDP only, the NGDP targeting literature misses the objective of ensuring or favoring financial stability. In this respect, Whelan (2013) and Blot et al. (2014) have argued for a broader mandate for central banks: the price stability objective should be augmented with an objective of financial stability and an objective of economic performance, without a hierarchy attached to these objectives. Rather than a dual mandate, as in Fed’s statutes, they advocate a triple mandate.

¹ Billi (2015) argues that NGDP targeting is less effective than price level targeting to dampen a technology shock under a zero-lower bound.

3. ECB MONETARY POLICY

We assess whether introducing NGDP targeting would have changed the stance of monetary policy in the euro area during the crisis. Would it provide the ECB with more flexibility and more leeway to deal with low inflation and low growth environment? To this end, we estimated the reaction of short term interest rates in the euro area to different macro indicators: inflation, real output growth, nominal output growth and financial stability index since 1999. Drawing on the pre-crisis period, we perform a counterfactual experiment and compare the outcomes with actual short term rates and with shadow rates (which is an implicit measure of monetary policy including unconventional measures).

3.1 Policy rules

We distinguish three different types of rules: a flexible IT, a NGDP targeting and a “triple mandate” rule (see equations below). All three rules include a constant and a first lag for the instrument, EONIA rate². The source of the quarterly data is the ECB Statistical Data Warehouse.

Flexible IT

$$i(t) = \rho i(t-1) + (1-\rho) * (\bar{i} + \theta_{\pi} * (\pi - \bar{\pi}) + \theta_y * (y_r - \bar{y}_r))$$

where $i(t)$ is the interest rate fixed by the central bank, π the inflation rate and y_r an indicator of real activity. $\bar{\pi}$ and \bar{y}_r are the targets for inflation rate and real activity. \bar{i} stands for the neutral nominal interest rate.

NGDP targeting

$$i(t) = \rho i(t-1) + (1-\rho) * (\bar{i} + \theta_{yn} * (y_n - \bar{y}_n))$$

where y_n stands for the nominal GDP and \bar{y}_n the target for nominal GDP.

Rules with financial stability

$$i(t) = \rho i(t-1) + (1-\rho) * (\bar{i} + \theta_{\pi} * (\pi - \bar{\pi}) + \theta_y * (y_r - \bar{y}_r) + \theta_z * z)$$

where z is a financial indicator.

The flexible IT rule includes the inflation rate and the real GDP growth rate. The latter substitutes for the output gap whose measure is very sensitive to methods and data. The NGDP targeting rule simply includes the nominal GDP growth. Both rules differ mainly to the extent that the coefficient of inflation statistically differs from the coefficient of real GDP growth in the former rule. Besides, in the IT rule, the focus is on consumer price index (CPI) whereas in the NGDP rule, the price target is the GDP deflator. The “triple mandate” rule adds a financial stability index to the flexible IT rule. We use the CISS (composite index of systemic stress) computed by the ECB as the financial stability index. All equations are estimated by OLS. Inflation target, output target and neutral interest rate are captured by the constant term.

It is worth acknowledging that the ECB is not officially pursuing any of these rules and it is not an IT area *per se* despite its targeting price stability. Our estimations only try to capture potential regularities in the reactions of the EONIA rate (which we take as a proxy of the ECB policy rate) to different macro variables. It permits to gauge the

² EONIA (Euro OverNight Index Average) is the effective overnight reference rate for the euro. It is computed as a weighted average of all overnight unsecured lending transactions in the interbank market.

sensitiveness of the EONIA rate to GDP, whether real or nominal, and to explore the extent to which the ECB might be an “inflation nutter” or not.

3.2 Results

Results of the estimation of a flexible IT rule on the pre-crisis sample (1999Q1-2007Q4) are given in Table 1. The aim here is to mimic the behaviour of the ECB in the pre-crisis period under the assumption that it followed a flexible IT rule, a NGDP rule or a “triple mandate” rule.

Table 1. Flexible IT, NGDP targeting and “triple mandate” estimation results

<i>Dependent variable</i>	<i>Flex IT rule</i>	<i>NGDP rule</i>	<i>“Triple mandate”</i>
<i>Constant term</i> <i>(t-stat)</i>	-0.59*** (-3.39)	-0.698*** (-4.177)	-0.116 (-0.52)
<i>EONIA (t-1)</i> <i>(t-stat)</i>	0.898*** (28.11)	0.867*** (22.32)	0.91*** (29.14)
<i>Inflation</i> <i>(t-stat)</i>	0.1829** (2.48)		-0.03 (-0.32)
<i>Real GDP growth</i> <i>(t-stat)</i>	0.2342*** (9.66)		0.216*** (7.99)
<i>Nominal GDP growth</i> <i>(t-stat)</i>		0.256*** (7.20)	
<i>CISS</i> <i>(t-stat)</i>			0.05 (0.09)
<i>Adjusted-R2</i>	0.97	0.955	0.98
<i>Sum of squared residuals</i>	0.787	1.205	0.509
<i>Normality test (Jarque-Bera)</i> <i>(p-value)</i>	0.12 (0.94)	1.38 (0.50)	3.94 (0.14)

Source: Authors’ estimates

As expected, EONIA has been very inertial and its reaction to (consumer) inflation is positive and close to 1.8 in the long run. Moreover, the EONIA rate does also react to real GDP growth, with a coefficient of 2.3 in the long run, which is close to the reaction to inflation. It must yet be stressed that the difference between the two parameters of the flexible IT reaction function is statistically significant at the 10% level.

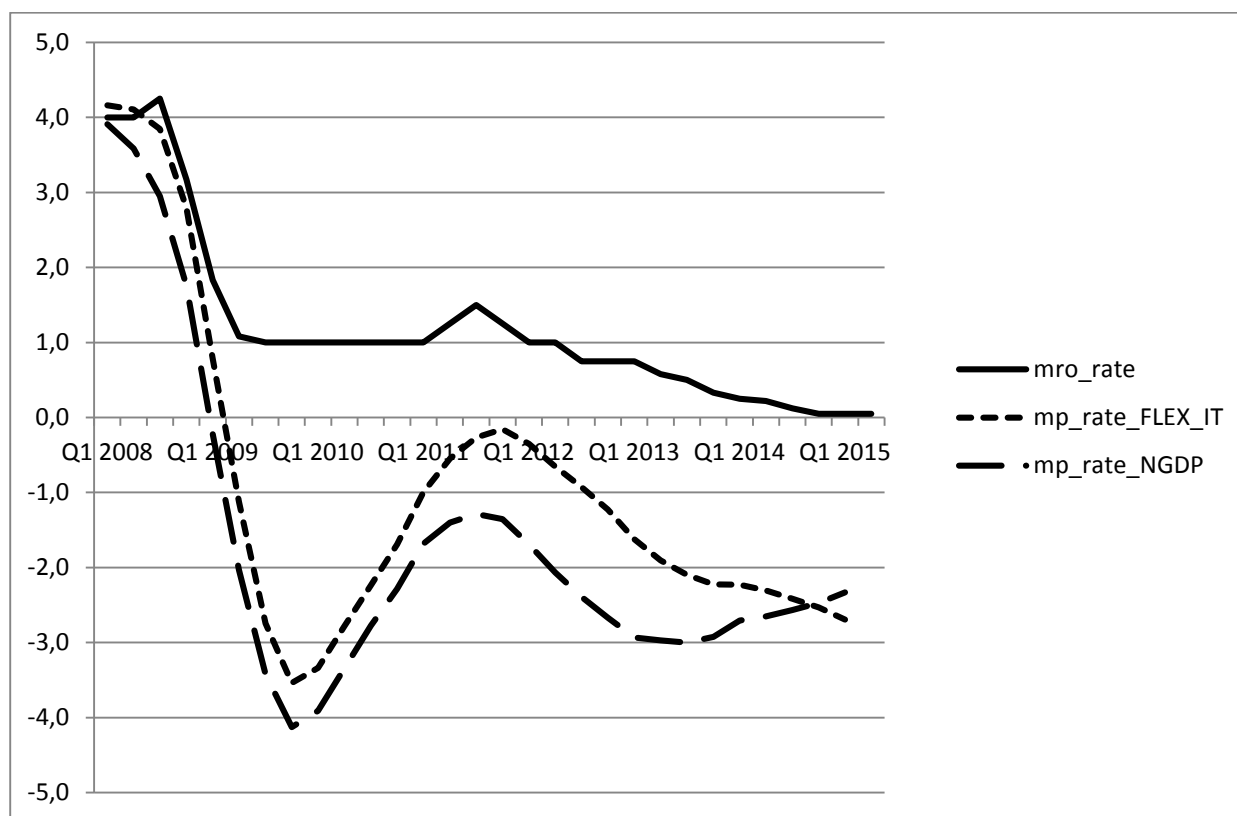
The ECB does not appear as an “inflation nutter”. The estimation of a NGDP targeting rule shows that the reaction of EONIA to NGDP is 1.9 (hence including reaction towards GDP inflation). Differences between both estimations are small and confirm counter-argument 1 (in section 2.2) that flexible IT and NGDP targeting can be very close. However, flexible IT better fits the data and therefore better characterizes the behaviour of the ECB before the crisis than NGDP targeting: the standard error is diminished by

18% and the sum of squared residuals by 35%³. Finally, the estimation of a “triple-mandate” rule shows that neither inflation nor the financial stability index is statistically significant in the pre-crisis period.

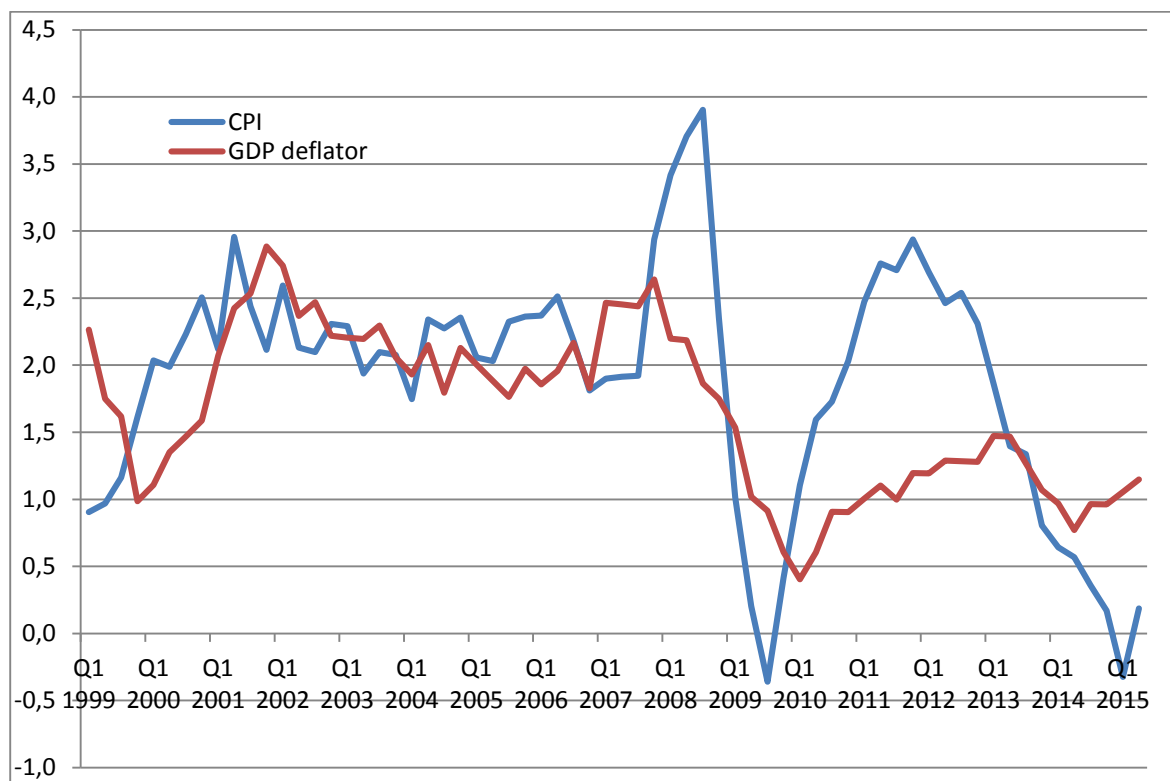
Based on these estimations, we run a counterfactual exercise on the crisis years, since 2008Q1. We simulated the path of EONIA had it reacted according to the pre-crisis estimation of a flexible IT rule or a NGDP targeting rule (see figure 1)⁴. According to both simulated paths, the nominal interest rate should have been negative had the ECB followed one or the other rule. Until 2009Q1, the actual rate and the simulated rates show very similar trends, but after that, discrepancy emerges. The beginning of 2009 seems to testify for a change in the conduct of monetary policy and a large discrepancy *vis-à-vis* modified Taylor rules. Under these rules, the expansionary stance of ECB monetary policy would have been substantially larger and nominal rates would have been set below zero. The path difference between flexible IT and NGDP targeting would have been very limited until 2010Q4; then monetary policy under a NGDP targeting rule would have given a monetary average impetus of 1% compared to the flexible IT rule. However, it must be stressed that at the end of the sample, we observe an increase in the interest rate stemming from the NGDP rule (from -3% to -2.3%) whereas a flexible IT rule leads to a further decline in the interest rate. The NGDP rule would have delivered a less expansionary monetary policy stance than the flexible IT rule. This difference relates to the gap between price measures in the two rules. The CPI inflation rate is still declining whereas GDP deflator – the measure of prices used in the NGDP rule – is positive and has increased since 2014Q2 (figure 2). Meanwhile, y-o-y real GDP growth has also been rising since the end of 2013. Then under the NGDP rule, the two variables targeted by the central bank are increasing, which would thus lead the central bank to reduce the monetary stimulus. Under the flexible IT rule, the two targeted variables provide contrasting signals; according to the rule, the ECB would have to implement further expansionary measures to tackle the rapid and sharp decline in the inflation rate.

³ The fits are not shown here but are available upon request.

⁴ Due to poor in-sample performances, simulations based on the “triple mandate” have not been performed.

Figure 1. Counterfactuals since the crisis

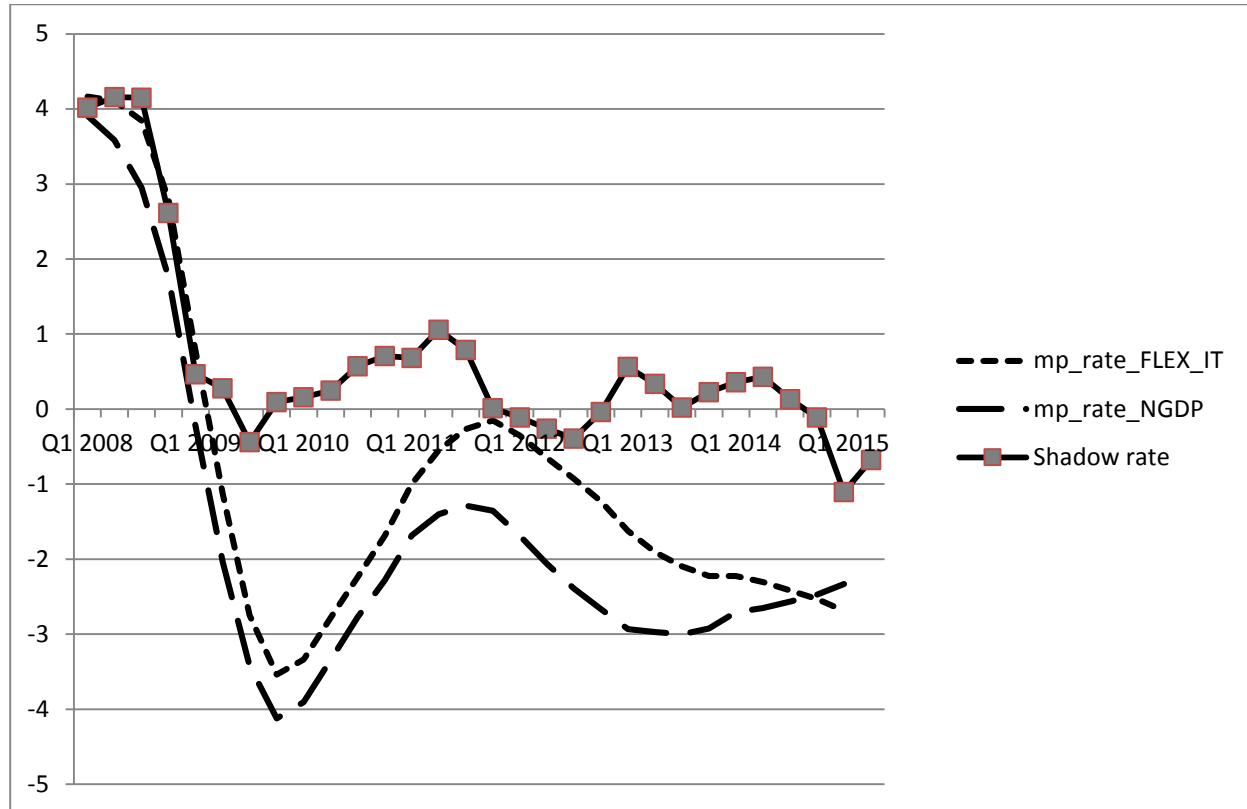
Source: ECB Statistical Data Warehouse and authors' estimates.

Figure 2. Measuring prices

Source: Eurostat.

Bearing in mind that nominal interest rates are not usually negative in practice, it may be more relevant to compare the simulated paths with the shadow rate, which incorporates unconventional monetary policy measures and more comprehensively characterizes the actual monetary policy stance in times of crisis. In figure 3, we compare the same two simulated paths as in figure 1 with the Wu-Xia shadow rate of the ECB. The main conclusion to draw here is that the monetary stimulus would have been amplified had the ECB followed a flexible IT or a NGDP rule.

Figure 3. Counterfactuals and the Shadow rate



Sources: ECB Statistical Data Warehouse, Wu & Xia and authors' estimates.

4. CONCLUSION

Nominal GDP targeting has resurfaced in the recent debate on the monetary policy regime. Some economists have argued that it would help central banks to better achieve their mandate. In the US, it would help the Federal Reserve to meet its dual mandate. In the euro area, others claim that it would make economic growth enter the realm of central bankers. The NGDP targeting regime would then provide better macroeconomic stabilization than its direct competitor, the inflation targeting regime, which has been largely adopted by central banks since the 1990s. Even if the ECB may not be classified as *de jure* inflation targeter, it remains that priority is given to price stability and that the ECB has quantified its objective in terms of inflation only. A NGDP targeting would lead the ECB to define a target for nominal GDP and to define the stance of monetary policy in reaction to the deviations of nominal GDP to the target. In this paper, we aimed at analysing the advantage of NGDP targeting, comparing this regime to inflation targeting.

First, it should be reminded that IT regimes do not overlook activity. Actually, in flexible IT regimes, the central banks also react to economic activity. Then, flexible IT and NGDP regimes are very close. Our estimates and simulations provide some illustrations on this point. The benefit of a change in regime might be very small.

Besides, communication issues may arise with the adoption of NGDP targeting as neither the nominal GDP, nor the implicit GDP deflator are variables which are scrutinized by households or firms. As communication play an important role for the credibility of monetary policy, we consider that such a regime shift would introduce unnecessary difficulties for the ECB without providing much more flexibility.

If the aim were to bring the ECB to pay more attention to growth, it would be more direct to fix a dual mandate and to set an explicit target for output growth or the unemployment rate.

Besides, it is not clear whether NGDP targeting would promote financial stability or not. IT regimes have been largely criticised in this respect and the adoption of NGDP regime would not bring the ECB to be concerned by financial stability. In our view, promoting financial stability is the main challenge for central banking, an issue on which NGDP targeting does not provide satisfactory answers.

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